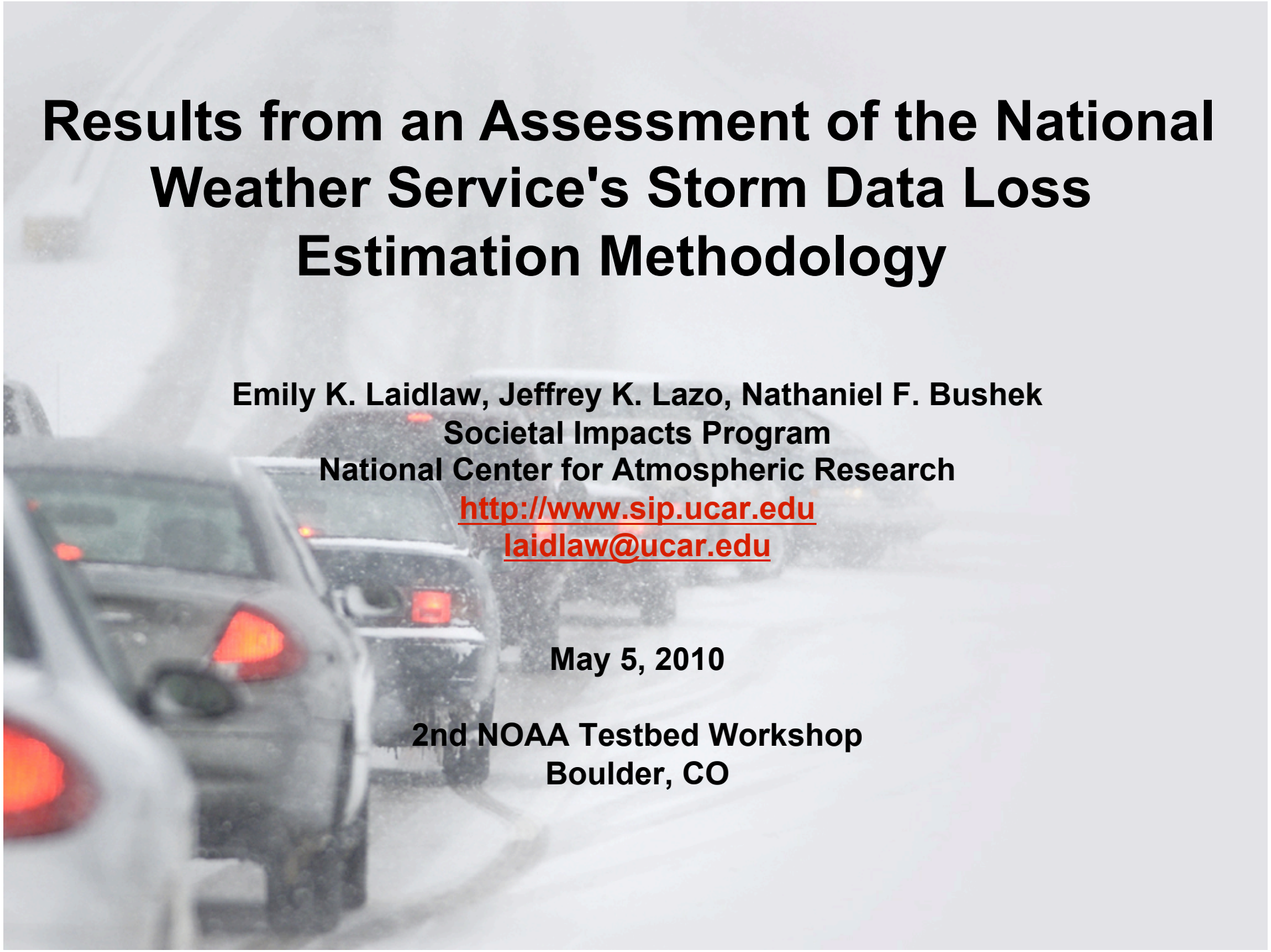

Results from an Assessment of the National Weather Service's Storm Data Loss Estimation Methodology

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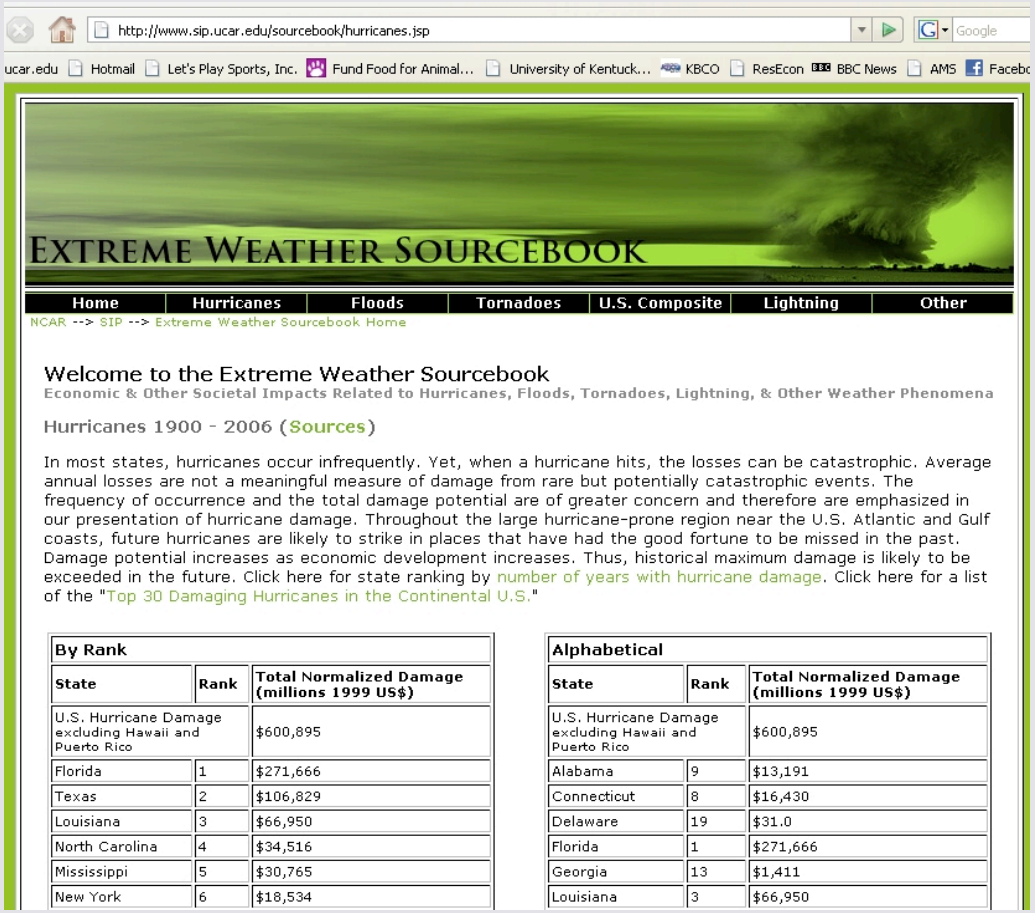
Motivation

- Extreme Weather Sourcebook
  - Reliability and validity of data
  - Most data from Storm Data
- Not much information on Storm Data generation outside of NWS
- Storm Data and other damage data used to:
  - Examine trends in intensity and frequency of impacts
  - Ensure cost effectiveness of government-funded efforts
  - Resource for media & public
- Used without consideration of data quality issues
- Storm Data represents best infrastructure for a national monetary damage database



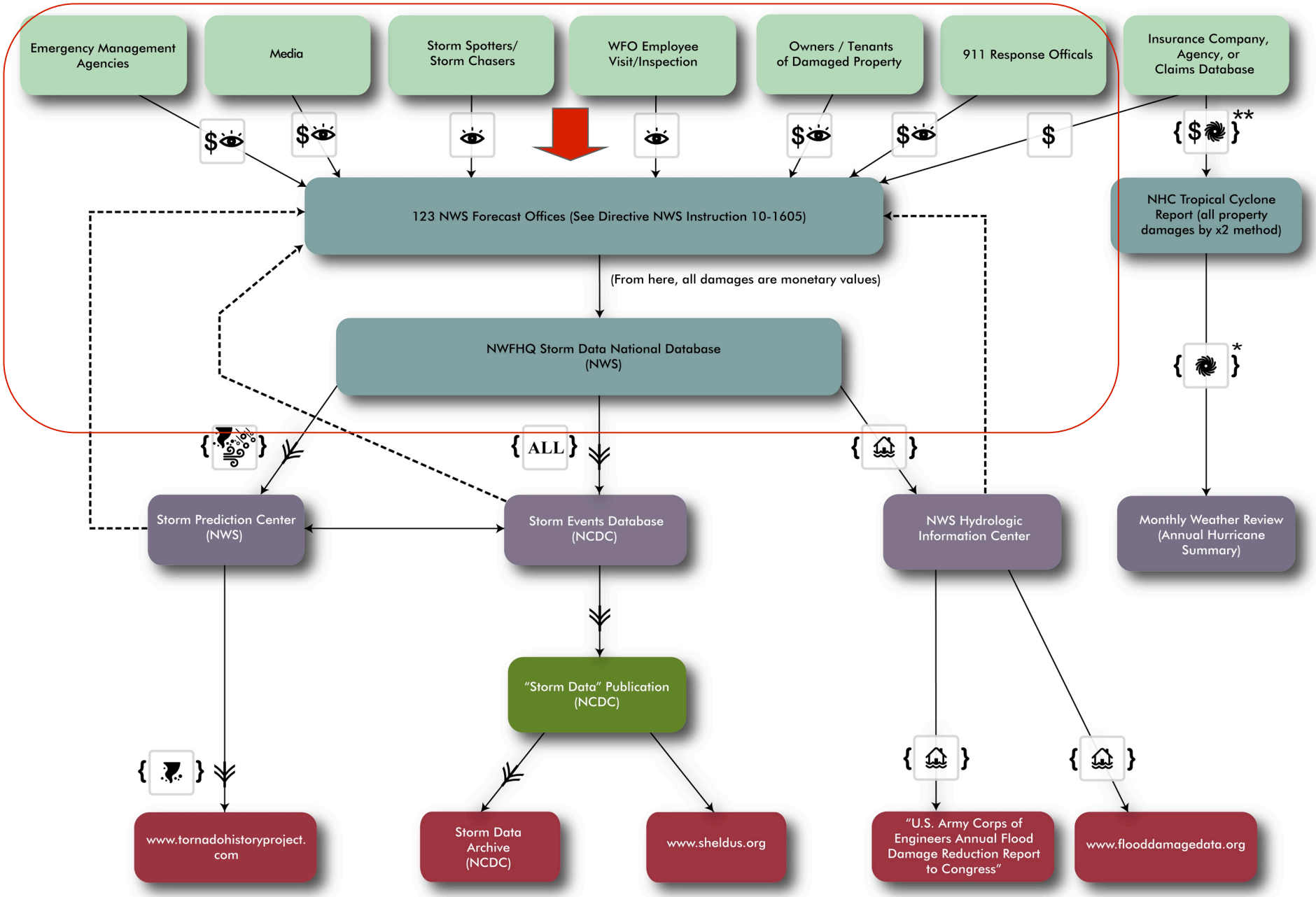
Goals of the Project

What we wanted to do

- Increase understanding of the process of making Storm Data monetary loss estimates
- Provide feedback to NWS to help improve Storm Data motivation and training
- Ultimately increase the consistency and quality of the data being entered in Storm Data

What we didn't want to do

- Pretend to be experts
- Undermine the hard work that goes into creating Storm Data
- Create more work for those entering Storm Data



* *Although this relationship is unconfirmed, an almost word-for-word similarity exists between the "Causualty & Damage Statistics" section in both sources.*

** *Since at least 1987, uses X2 Method.*

Legend

- $ — Damage info as estimated monetary value.
- Damage info in the form of photos, descriptions, on-site surveys or other non-monetary info.
- Source giving info is exlusive provider of damage data to the database.
- { } — In the case where a damage database specializes in specific events, the events are included within the brackets.
- Errors are corrected at originating WFO and sent through cycle second time.
- Tornadoes
- Hail
- Damaging Wind
- Floods
- Tropical Storms or Hurricanes

Our Research – Overview & Methods

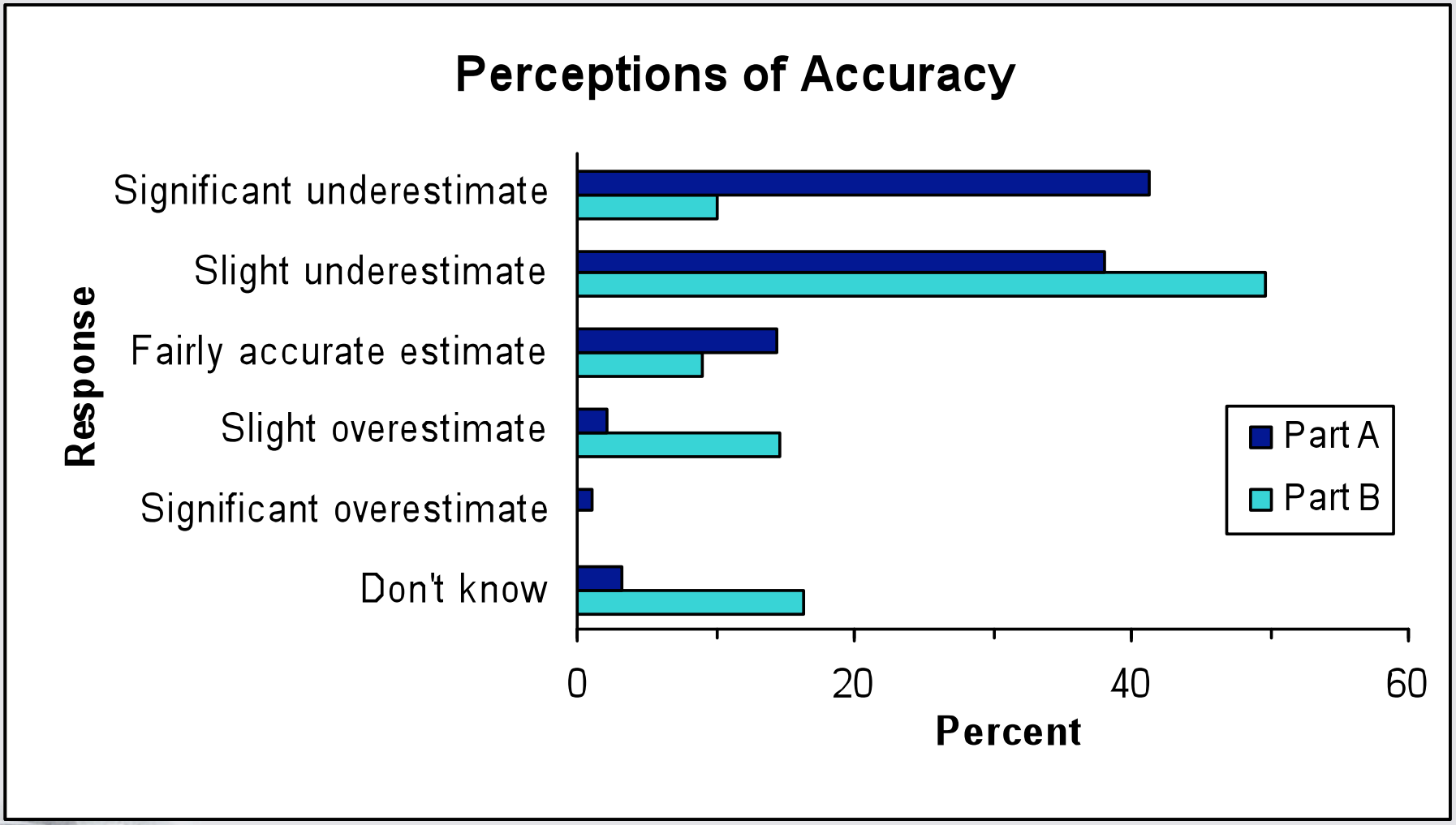
- **Surveyed NWS personnel who generate Storm Data**
- **Worked with NWS Performance Branch**
- **Focued on events, not episodes**

- **Two part survey**
  - Part A – Surveyed 122 Weather Forecast Offices (WFO) + Amer. Samoa
    - **WCM gathered collective responses for WFO**
    - **Focused on how Storm Data process works at WFO**
    - **81% response rate (100 WFO)**

  - Part B - Quantitative survey of 647 events (out of 72,835) 8/07 – 7/08
    - **Survey sent to NWS employee who created data for particular event**
    - **Focused on how data was generated and recorded for specific event**
    - **41% response rate**

- **Pretested by NWS and societal impacts researchers**
- **Controlled access through external survey company**

Perceptions of Accuracy



Conditions when estimating $0 or no info for losses

Response	$0	No Info
You suspected there were monetary losses but did not have the . . .		
. . . time	0%	31%
. . . information	23%	79%
. . . training or technical skill	12%	28%

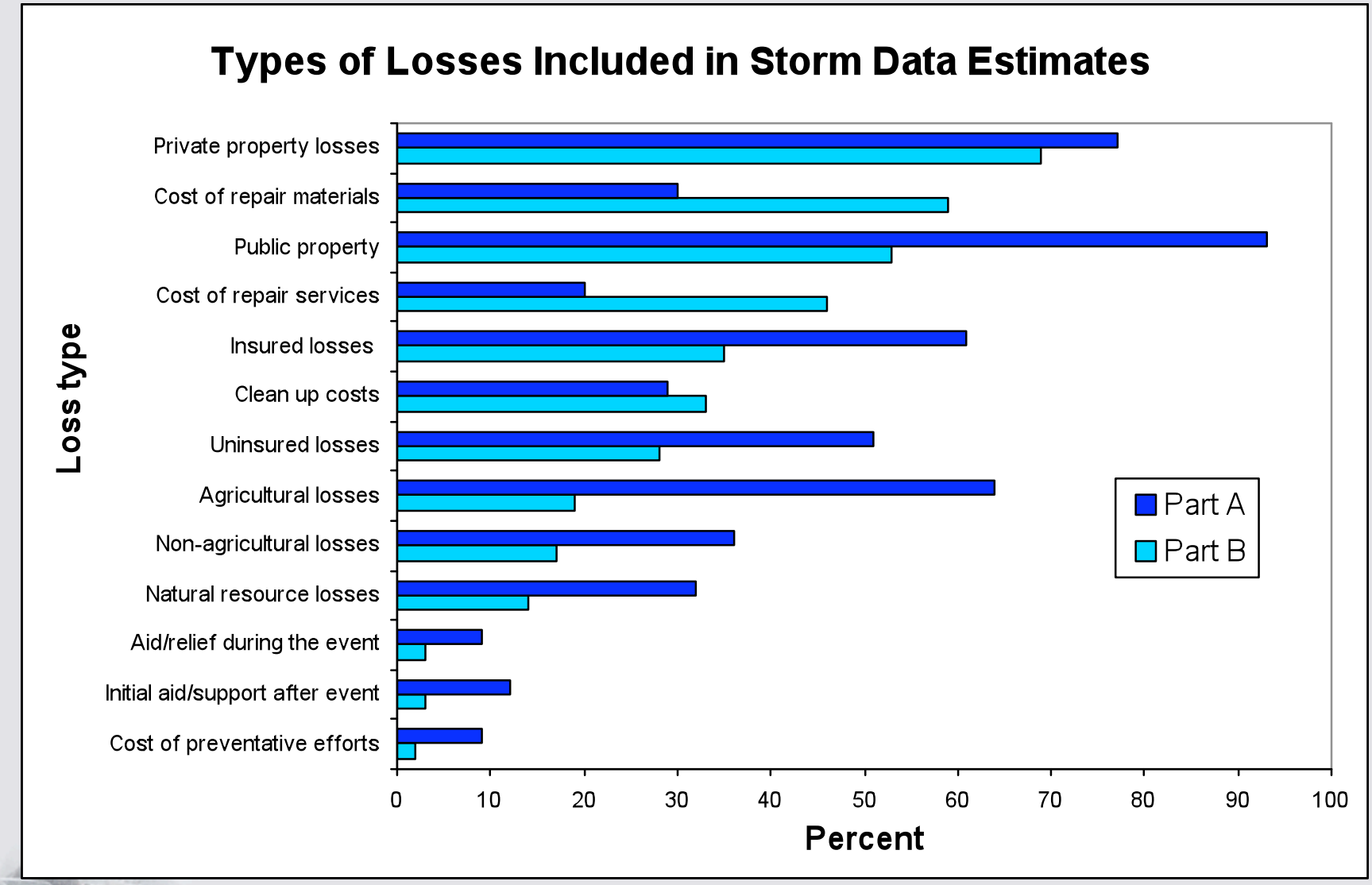
Perceptions of Accuracy

- 81% of WFOs – insufficient access to needed information sometimes prevents them from making reliable loss estimates

- 69% of WFOs – recorded "no information available" for loss estimate at least "sometimes" in the past year even though they knew or suspected there were monetary losses
  - 56% said insufficient information caused them to enter "no information available" for Part B event
  - 21% expressed confidence for Part B estimate when entering no info.

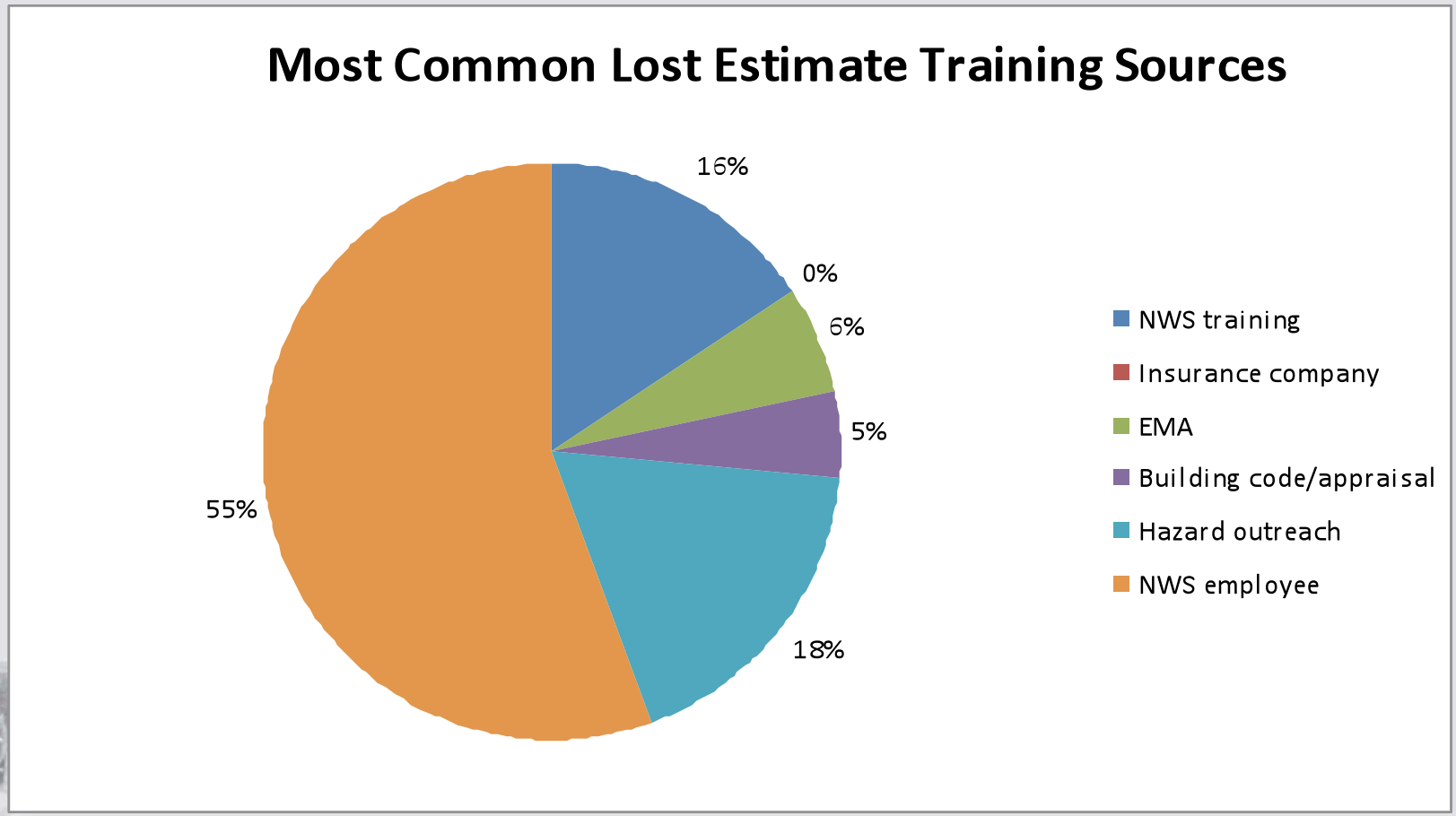
- 52% of WFOs – recorded $0 for loss estimate at least "sometimes" in the past year even though they knew or suspected there were monetary losses
  - 48% said insufficient information caused them to enter "$0" for Part B event
  - 53% expressed some confidence for Part B estimate when entering $0

Types of impacts Included in loss estimates

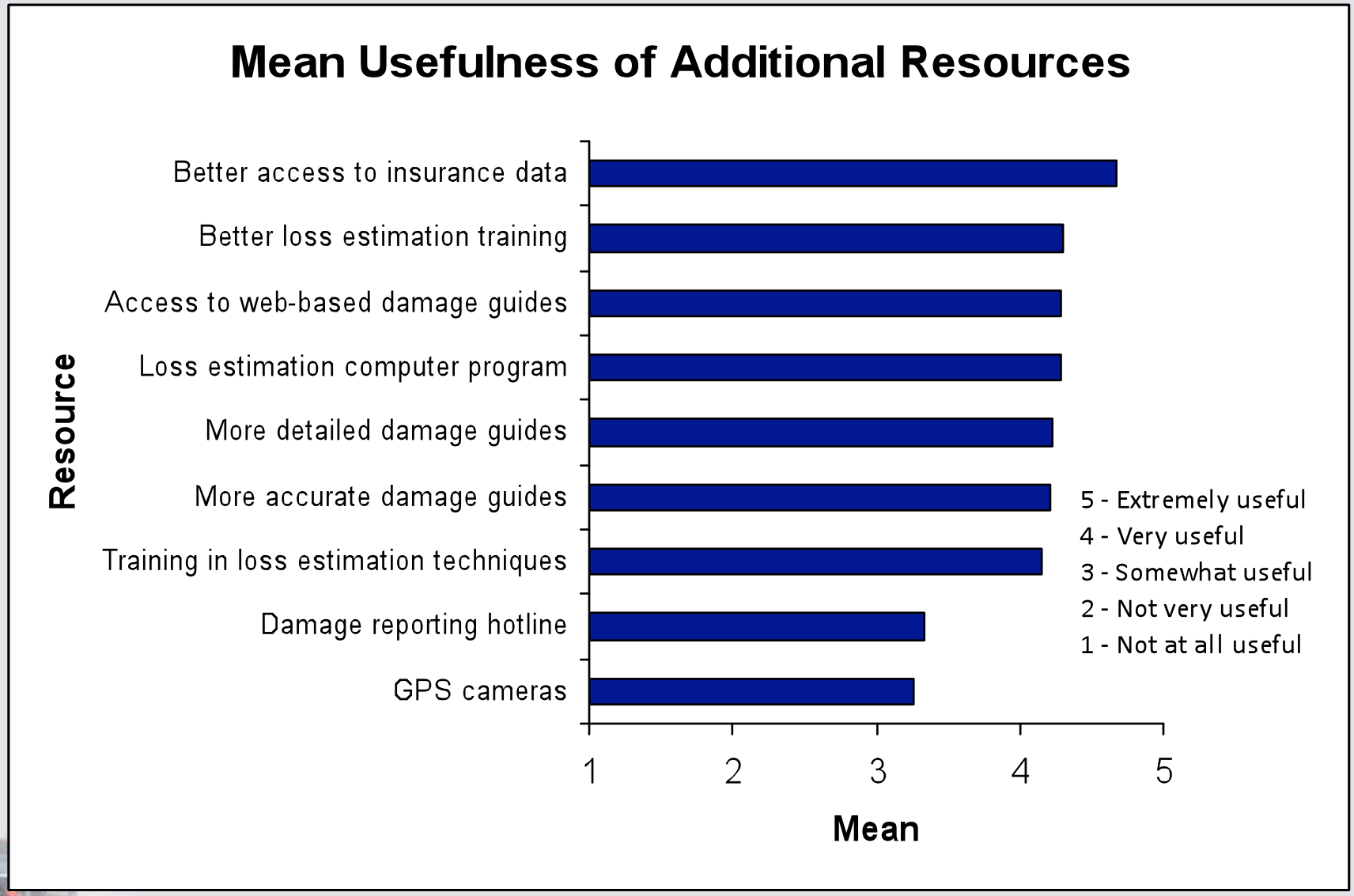


Training/Resources

- 36% of respondents reported that their WFO had received no formal training in estimating monetary losses
- Yet 87% of respondents said it was “very important” or “extremely important” that all WFOs use a similar methodology to estimate Storm Data monetary losses



Additional Resources



NWS Changes as a Result of Storm Data work

- Developing standardized software (summer 2010) to create more consistent and accurate loss estimates
  - Improve metadata
  - Improve use of data
- Creating new training modules
  - Using articulate presenter technology that combines PowerPoint slides with voiceover
  - Will be available on web site
  - Can track who has taken what classes
- Changing how Storm Data is entered
  - Will require employees to enter a confidence estimate
  - Will send employees a reminder to update their estimate

Conclusions

Summary of Findings

- WFOs perceive that they are underestimating the societal impacts of Storm Data events
- NWS employees are passionate, dedicated but don't believe they have sufficient training, information resources, or time
- Time is far less problematic than training and better access to resources
- NWS employees feel that there's a strong need for additional training and resources

Results

- NWS making changes in response to our findings
- We will continue to work with performance branch to provide additional recommendations

Questions?

Thank you!

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For more about SIP:

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